

FILE COPY *pt***CERTIFICATE OF MAILING**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.



Date: December 6, 2000

Signature:

Francis J. Caufield

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Serial No.:	09/677,679	Art Unit:	2877
Filed:	October 2, 2000	Examiner:	unassigned
Inventor:	Stephen D. Fantone, et al.		
For:	AUTOMATED OPTICAL MEASUREMENT APPARATUS AND METHOD		

**REQUEST FOR CORRECTED FILING RECEIPT**

Assistant Commissioner for Patents  
Office Of Initial Examination  
Customer Correction Branch  
Washington, D.C. 20231

Sir:

Please find attached a photocopy of the Official Filing Receipt I received for the subject application. I request that the filing receipt be corrected as indicated by the changes marked in "red" on the photocopy to be consistent with the "CROSS REFERENCE TO RELATED APPLICATION" section of the specification and the Declaration. I enclose copies of both of these documents highlighted to support the correct information to be entered on the corrected filing receipt. Thank you for your attention in this matter.

Respectfully submitted,

December 6, 2000

Date

Francis J. Caufield  
Registration No. 27,425  
6 Apollo Circle  
Lexington, MA 02421-7025  
Telephone: 781 860 5254  
Facsimile: 781 862 9464

APR - 9 2001  
TECHNOLOGY CENTER 2800

RECEIVED

FJC:fjc  
Enclosures



O I P E  
DEC 11 2000  
PATENT AND TRADEMARK OFFICE

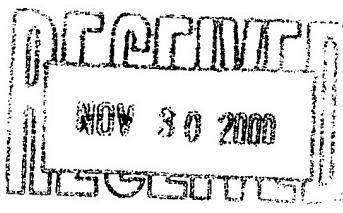
Page 1 of 4  
# CIP 44701

UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/677,679	10/02/2000	2877	400	0205/US	22	25	3

Francis J Caufield  
6 Apple Circle  
Lexington, MA 02421-7025



FILING RECEIPT



\*OC000000005579310\*

Date Mailed: 11/27/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Stephen D Fantone, Lynnfield, MA ;  
Stephen Wilk, Saugus, MA ;  
Jian Zhang, Cambridge, MA ;  
Daniel J Braunstein, Arlington, MA ;

Continuing Data as Claimed by Applicant

THIS APPLICATION IS A CIP OF 09/328,972 06/09/1999  
~~WHICH CLAIMS BENEFIT OF 60/089,771 06/10/1998~~  
AND CLAIMS BENEFIT OF ~~(60/129,814 04/16/1999)~~ GO 1160,949 10/22/99

Foreign Applications

If Required, Foreign Filing License Granted 11/27/2000

\*\* SMALL ENTITY \*\*

Title

Automated optical measurement apparatus and method

Preliminary Class

356

RECEIVED  
APR - 9 2001  
TECHNOLOGY CENTER 2800



**TITLE: AUTOMATED OPTICAL MEASUREMENT APPARATUS AND METHOD**

TECHNOLOGY CENTER 2800  
APR - 9 2001  
RECEIVED

**CROSS REFERENCE TO RELATED APPLICATION**

5 This application is a Continuation-In-Part of United States Patent Application No. 09/328,972 filed on June 9, 1999 and also claims priority from United States Provisional Patent Application No. 60/160,949 filed on October 22, 1999, both of which are incorporated by reference herein in their entirety.

10

**BACKGROUND OF THE INVENTION**

This invention generally relates to methods and apparatus for testing optical systems and particularly to devices and techniques for the automated measurement of a variety of parameters of optical surfaces and/or elements including radii of curvature, surface shape, thickness, power, focal length, wavefront, topography, and aberrations.

15

Throughout the process for fabricating optical systems or components, it is frequently necessary to determine if, and how well, optical surfaces or elements conform to their designers stated requirements. Not only does the performance of optical systems in final form need to be verified, but various parameters of their components need to undergo intermediate testing for conformance with their

20

specifications prior to final assembly as a system. Indeed, even the tools of fabrication, especially molds for the formation of plastic or glass lens elements, need to be tested for compliance with design specifications. Some of the most frequently encountered measurements that need to be made are radius of curvature of surfaces in either convex or concave form, surface topography, thickness, power, and various focal lengths.

25

Classically, radius of curvature is measured through the use of a hand-held instrument called a spherometer, which measures the sagittal height (sag) of the surface over a known diameter and then displays the radius of curvature on a dial or other visual display after an internal calculation that relates radius to sag height and the known diameter. However, the accuracy of such devices are prone to relatively large errors because sag heights are usually small dimensions that are difficult to accurately measure mechanically.